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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,245	08/29/2001	Tongbi Jiang	4241.1US (99-0408.1)	8370
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TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			EXAMINER IM, JUNGHWA M	
			ART UNIT	PAPER NUMBER
			2811	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/942,245

Applicant(s)

JIANG, TONGBI

Examiner

Junghwa M. Im

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16, 19-24, 26-41 and 44-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19-24, 26-41 and 44-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 6, 10, 14, 20, 23, 26, 31, 35, 39, 45, and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims recite the limitation "a wetting agent layer ... a silane based material having no other material therein." It is confusing since the instant invention discloses that the wetting agent layer is formed of silane-based compound.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16, 19-24, 26-41 and 44-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 5,864,178), hereinafter Yamada in view of Plueddemann (US 4,388,132).

Regarding claim 1, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a wetting agent layer (207, 208; a polymer layer excellent in wettability; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Puueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 2-4, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 5, Yamada discloses the wetting agent layer reduces surface tension of the active surface throughout the specification especially in col. 20, lines 34-65.

Regarding claim 6, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

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a semiconductor device (or a die; 201) having an active surface;

a substrate (202) having an upper surface;

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a wetting agent layer (207, 208; a polymer layer excellent in wettability; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer "comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material."

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 7-9, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypolytinethoxysilane (col. 4, lines 24-26).

Regarding claim 10, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

a semiconductor device (or a die; 201) having an active surface;  
a substrate (202) having an upper surface;  
a wetting agent layer (207, 208; a polymer layer excellent in wettability; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 11-13, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 14, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a substrate (202; a circuit board) having an upper surface having a plurality of circuits thereon;

a plurality of bumps (203) connecting said plurality of bond pads on said active surface of said semiconductor device to said plurality of circuits on said upper surface of said substrate;

an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer);

a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

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In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claim 15 and 19, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 16, Fig.54 of Yamada shows an additional wetting layer on the upper surface of the substrate (208; col. 56, lines 22-63 and col. 17, lines 53-59).

Regarding claim 20, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

- a semiconductor device (or a die; 201) having an active surface;

- a substrate (202) having an upper surface;

- an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer).

- a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).



It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Pleuddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claim 21 and 22, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 23, insofar as understood, Fig.54 of Yamada shows a semiconductor assembly comprising:

- a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

- a substrate (202; a circuit board) having an upper surface having a plurality of circuits thereon;

- a plurality of bumps (203) connecting said plurality of bond pads on said active surface of said semiconductor device to said plurality of circuits on said upper surface of said substrate;

- an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer).

- a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during one of a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claim 24, Fig.54 of Yamada shows the underfill material substantially fills the gap between the semiconductor and the substrate.

Regarding claim 26, insofar as understood, Fig.54 of Yamada shows a semiconductor die comprising:

- a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

- a substrate (202; a circuit board) having an upper surface;

- a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 27-29, Pleuddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 30, Yamada discloses the wetting agent layer reduces surface tension of the active surface throughout the specification especially in col. 20, lines 34-65.

Regarding claim 31, insofar as understood, Fig.54 of Yamada shows a semiconductor die comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a substrate (202; a circuit board) having an upper surface;

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a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36), said wetting layer having a thickness of a monolayer provided on the active surface of said semiconductor device/die (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 32-34, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 35, insofar as understood, Fig.54 of Yamada shows a semiconductor die comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a substrate (202; a circuit board) having an upper surface;

a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36 located on the active surface of said semiconductor device/die (207).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during one of a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 36-38, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypolytinethoxysilane (col. 4, lines 24-26).

Regarding claim 39, insofar as understood, Fig.54 of Yamada shows a semiconductor die comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a substrate (202; a wiring circuit board) having an upper surface having a plurality of circuits;

a plurality of bumps (203) connecting said plurality of bond pads on said active surface of said semiconductor device to said plurality of circuits on said upper surface of said substrate;

said plurality of bumps forming a gap between said semiconductor device and said substrate;

an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer);

a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207) and on a upper surface of substrate (208; col. 56, lines 22-63 and col. 17, lines 53-59).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

In addition, the wetting layer formed with the combined teachings of Yamada and Plueddemann would not undergo substantial degradation during a curing process since it is formed of the same material to the one recited in the instant invention.

Regarding claims 40 and 44, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypopyltinethoxysilane (col. 4, lines 24-26).

Regarding claim 41, Fig.54 of Yamada shows the underfill material substantially fills the gap between the semiconductor and the substrate.

Regarding claim 45, insofar as understood, Fig.54 of Yamada shows a semiconductor die comprising:

- a semiconductor device (or a die; 201) having an active surface;
- a substrate (202; a wiring circuit board) having an upper surface;
- an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer);
- a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207) and on a upper surface of substrate (208; col. 56, lines 22-63 and col. 17, lines 53-59).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material having no other material therein which undergoes no substantial degradation thereof during a curing process for a material.”

Plueddemann discloses coating a primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to

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the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

Regarding claims 46-47, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypolytinethoxysilane (col. 4, lines 24-26).

Regarding claim 48, Fig.54 of Yamada shows a semiconductor die comprising:

a semiconductor device (or a die; 201) having an active surface having a plurality of bond pads (224);

a substrate (202; a wiring circuit board) having an upper surface having a plurality of circuits;

a plurality of bumps (203) connecting said plurality of bond pads on said active surface of said semiconductor device to said plurality of circuits on said upper surface of said substrate;

said plurality of bumps forming a gap between said semiconductor device and said substrate;

an underfill material (encapsulation resin; col. 56, lines 20-26) to fill the gap between said substrate and said semiconductor device (or between the substrate and the wetting agent layer);

a wetting agent layer (207, 208; a polymer layer excellent in wettability ; col. 54, lines 34-36) provided on the active surface of said semiconductor device (207) and on a upper surface of substrate (208; col. 56, lines 22-63 and col. 17, lines 53-59).

Fig. 54 of Yamada shows the most aspect of the instant invention except a wetting agent layer “comprising a layer of solely silane-based material with undergoes no substantial degradation thereof during a curing process for a material.” Plueddemann discloses coating a



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primer/wetting agent on the surface of the substrate to enhance the adhesion (col. 1, lines 1-63; col. 3, lines 22-68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Plueddemann for the wetting agent layer of Yamada in order to have to the wetting agent layer comprised of a layer of solely silane-based material to promote the adhesion through utilizing a coupling material well known in the industry.

Regarding claim 49, Fig.54 of Yamada shows the underfill material substantially fills the gap between the semiconductor and the substrate.

### ***Response to Arguments***

Applicant's arguments filed November 13, 2006 have been fully considered but they are not persuasive. The rejection stands, modified only to accommodate the amendments made to the claims by Applicant. New rejections are made in response to Applicant amended claims. In addition, the examiner presents the remarks below in response to Applicant's arguments.

Applicant argues starting on page 12 through page 13 that "Plueddemann teaches a primer composition for improving adhesion between a solid substrate and a thermosetting resins. In the description of the invention, the composition consists essentially of 1 to 25 weight percent of an organosilicon compound selected from a group of silane compounds or partial hydrolyzates thereof and 75 to 99 weight percent of an alkoxymethyltriazine (see col. 2, lines 5-17).

Plueddemann teaches an improved wet and dry adhesion of thermoplastics to solid substrates. (see col. 3, lines 22-24). The primer compound of Plueddemann is not directed to improved flow of an underfill material. teach or suggest the use of a wetting agent whatsoever." Note that the

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instant invention doesnot recite any of these aspect. Rather, the instant invention merely recites that a wetting agent layer of a silane-based material. Furthermore, Plueddemann discloses a wetting agent layer include at least one layer of glycidoxypropyltinethoxysilane that is the same material disclosed in the instant invention (col. 4, lines 24-26).

In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

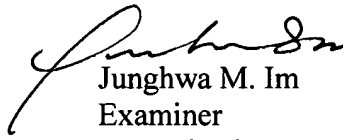
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Junghwa M. Im  
Examiner  
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jmi